# US Army Corps of Engineers Response to the Hurricanes of 2004

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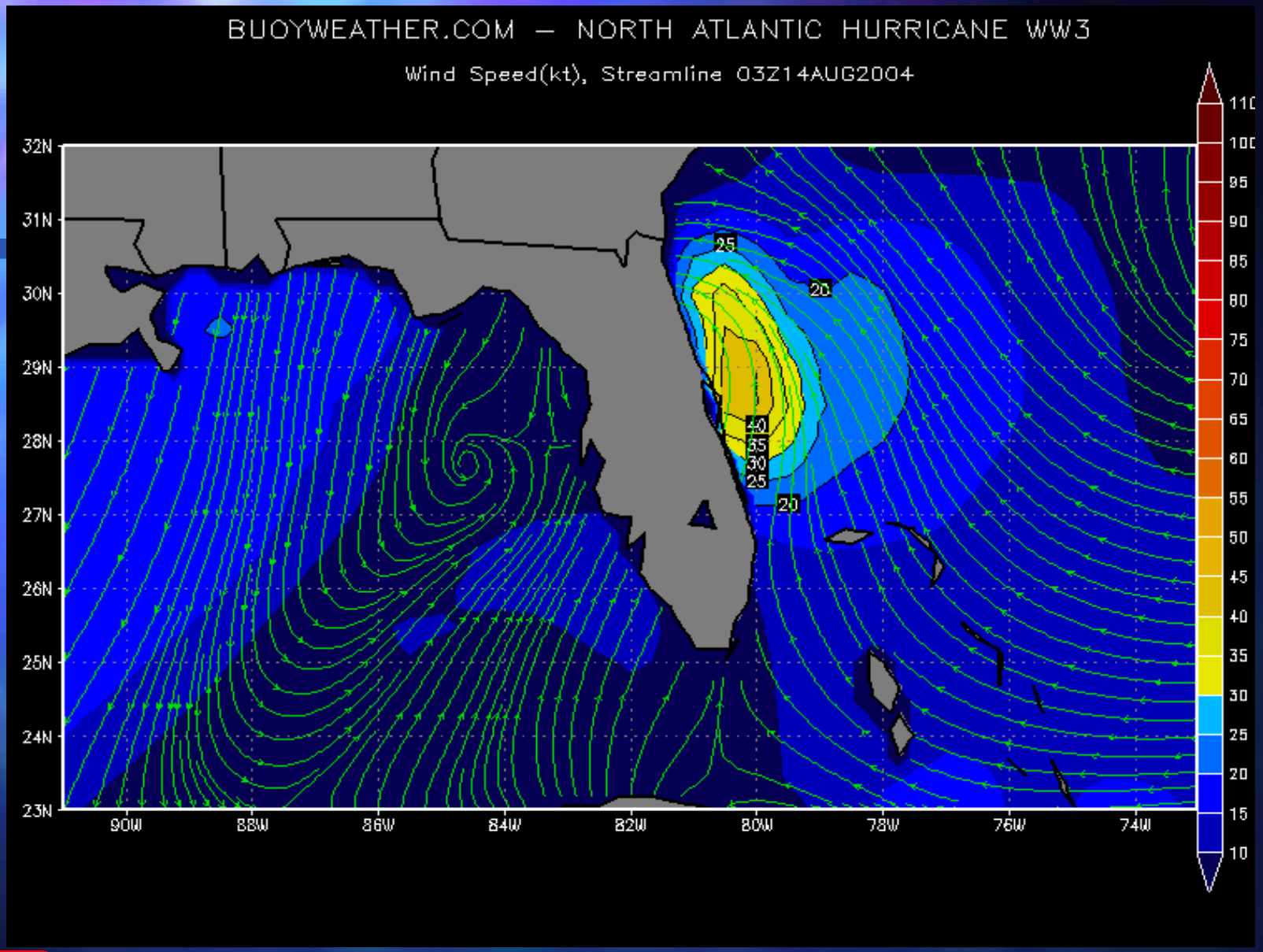
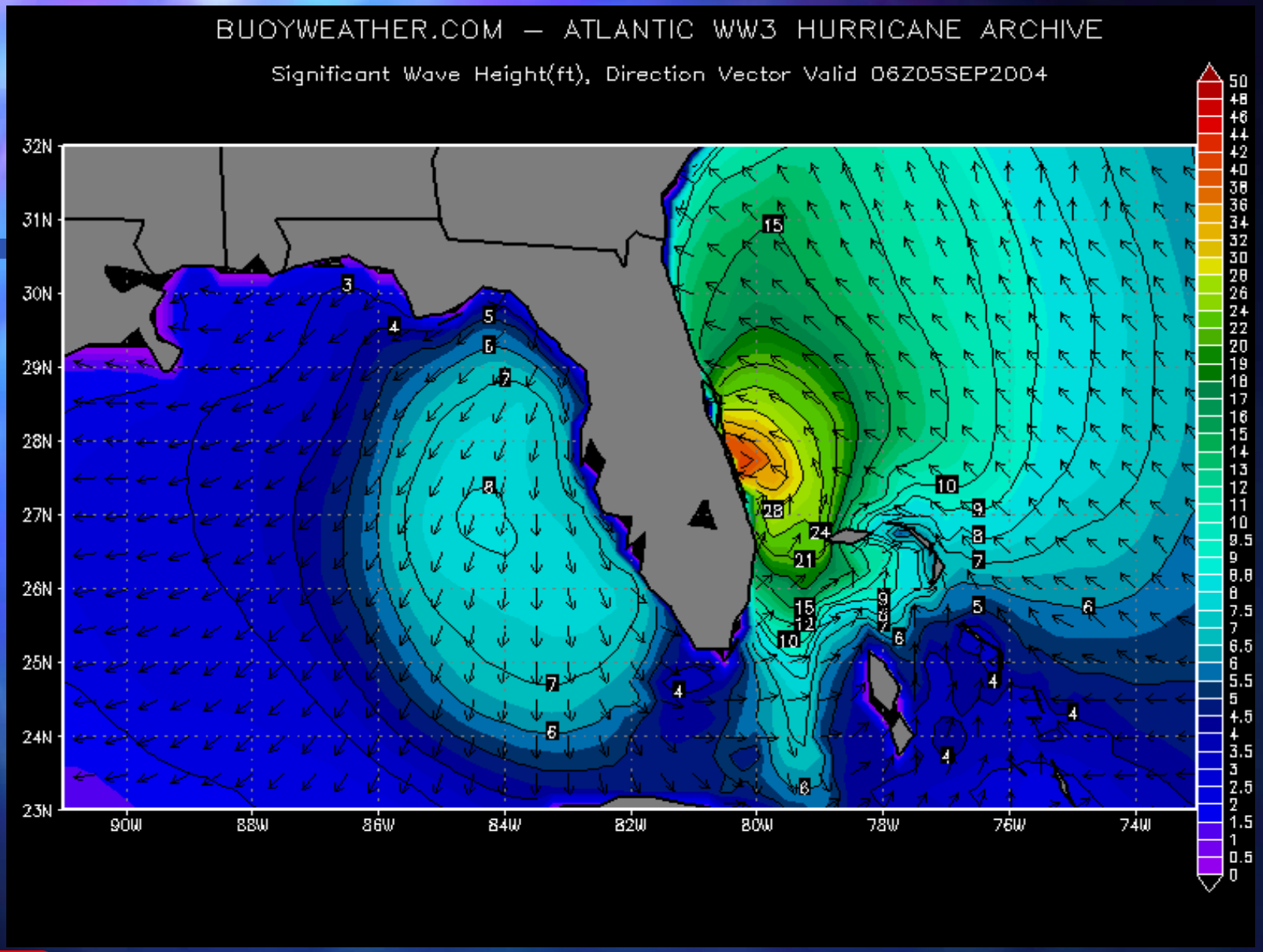
Daniel R. Haubner, PE
Jacksonville District

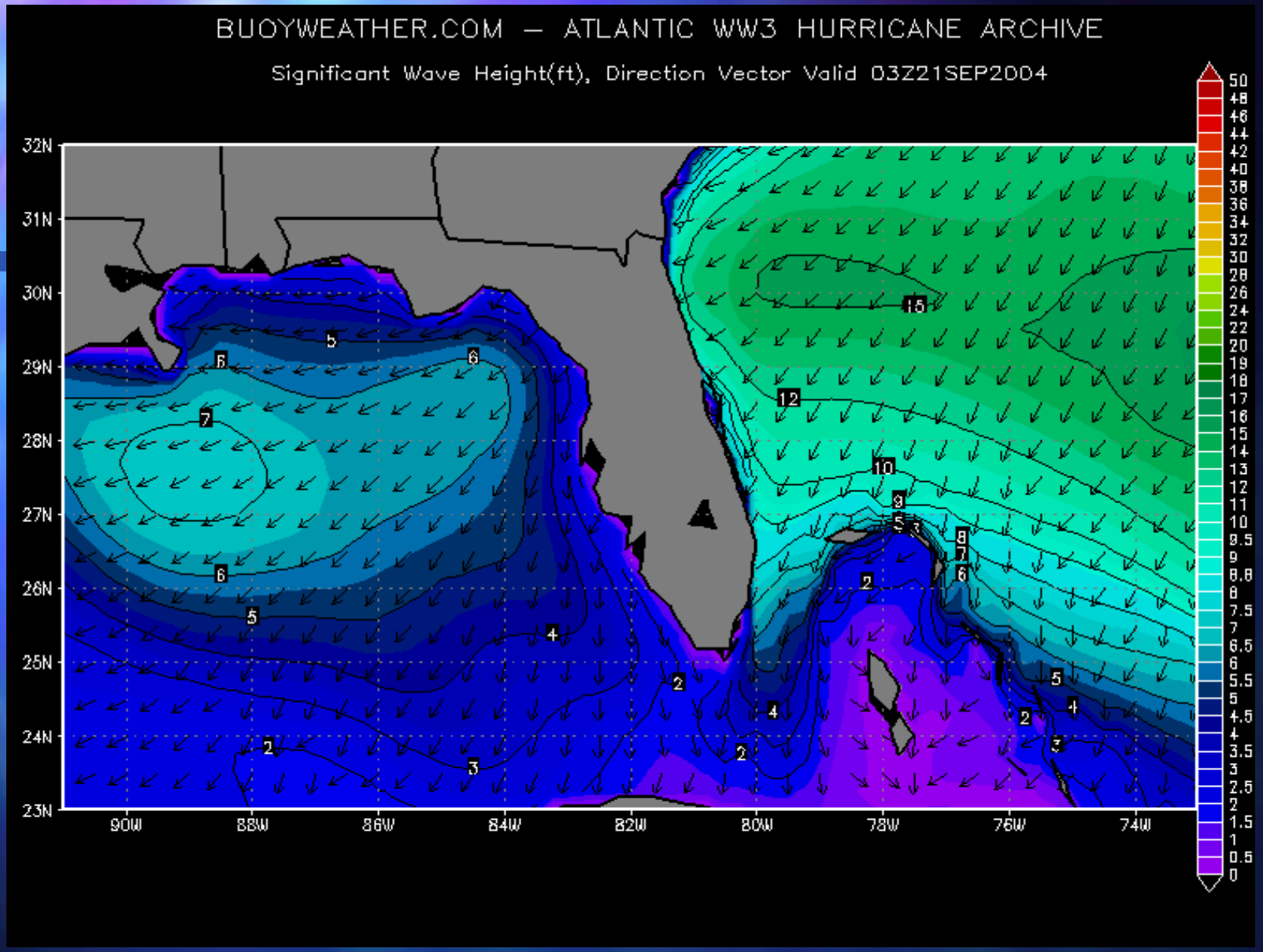
Florida Hurricane Paths
August - September, 2004
Hurricanes Charley, Frances, Ivan, & Jeanne
Ivan
16 Sep 2004
Frances
04 Sep 2004
Jeanne
26 Sep 2004
Charley
13 Aug 2004
Gulf of Mexico
Atlantic Ocean
Georgia
Florida
AL
Jacksonville
Orlando
Tampa



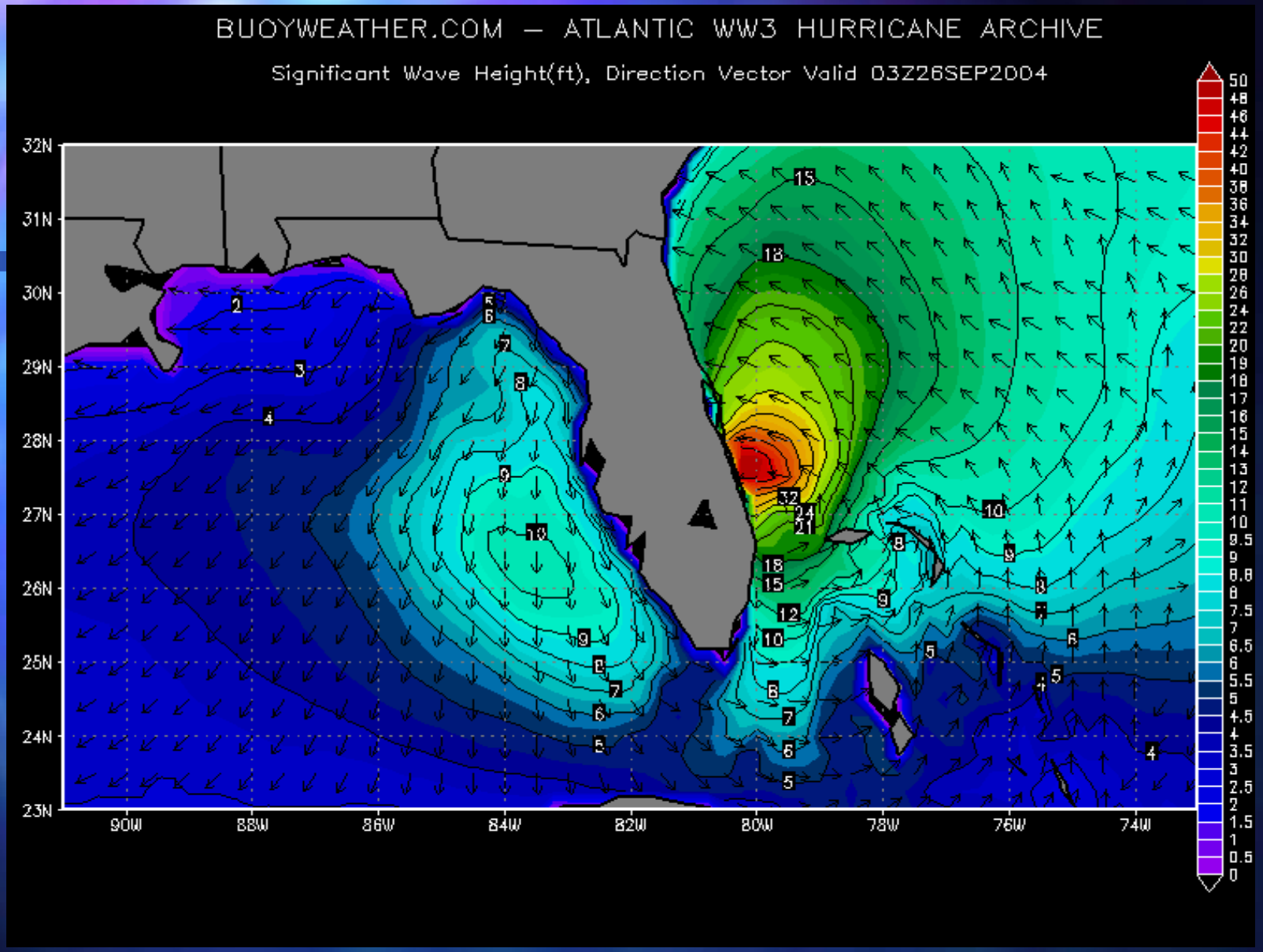

# Hurricane Charley- 2300 EDT 08/13/2004: Wave height (ft)




# Hurricane Frances- 0200 EDT 09/05/2004: Wave height (ft)

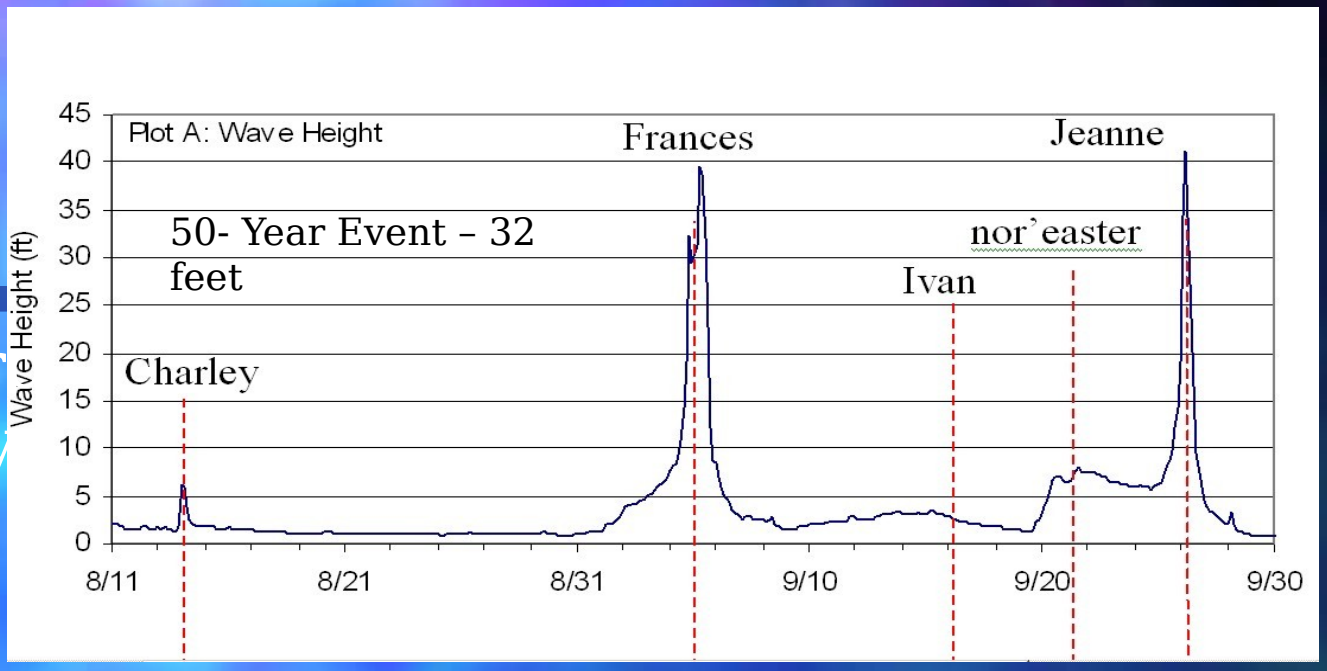



September 20th Nor'easter (pre-Jeanne) 2300 EDT 09/20/2004: Wave height (ft)

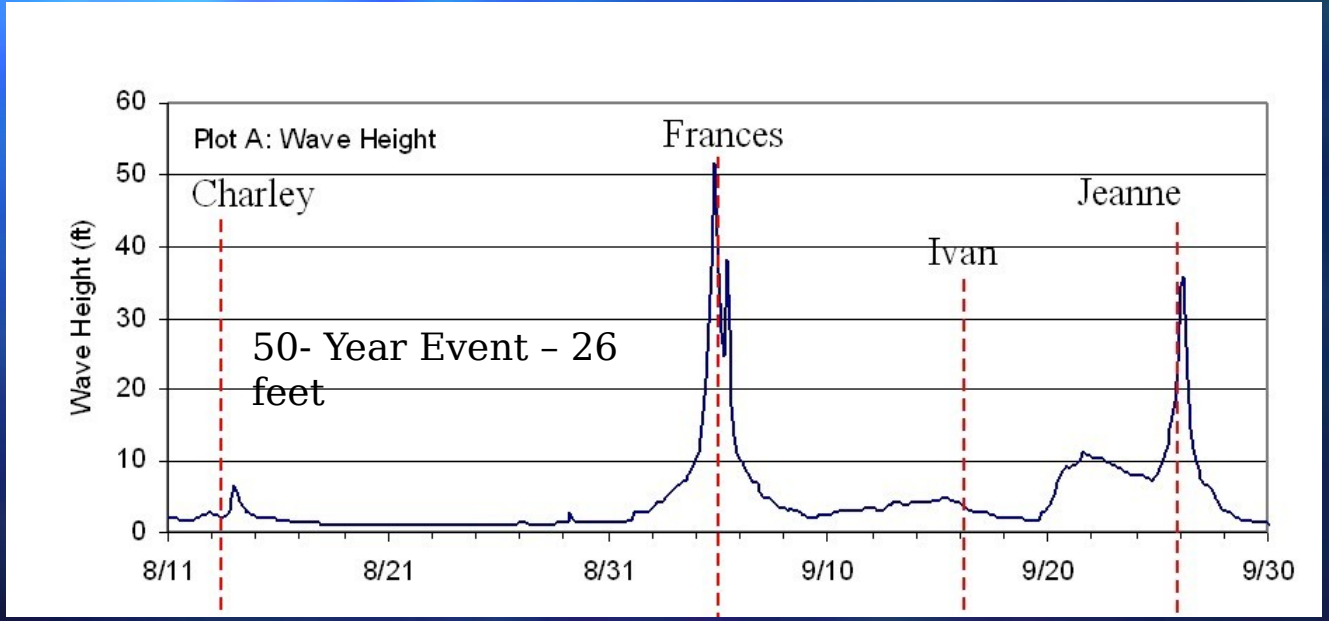



Hurricane Jeanne- 2300 EDT 09/25/2004: Wave height (ft)

Brevar
County




Marti
n
Count



# SAJ 2004 HURRICANE SEASON

- $565.5M in FEMA assigned missions.
- 2 Separate ERROs w/ 1,263 personnel.
- SAJ – placed 83,997 roofs (136,449 total for all of Florida).
- SAJ – delivered 5.85M Liters of water, 22M Liters total.
- SAJ – delivered 635,446 lbs of ice, 24M lbs ordered total.

# SAJ 2004 HURRICANE SEASON

- Installed 420 emergency generators (hospitals, pump stations, sewage).
- Identified 57 Mobile Home group parks for temporary

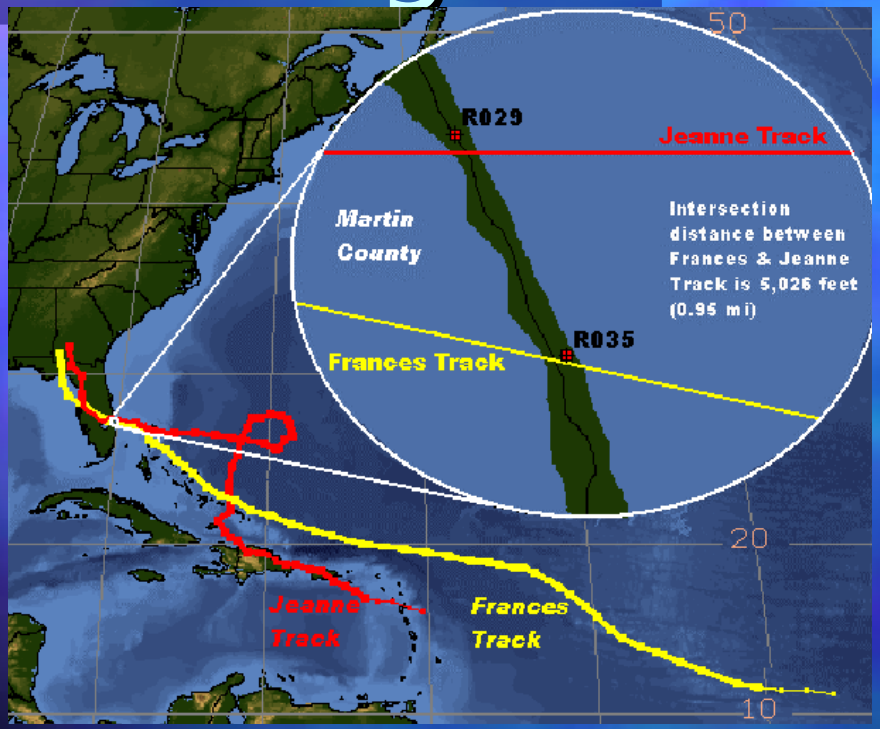
# EMERGENCY DREDGING ISO OF SHOALING

- 3 – Deep Draft Navigation Projects effected USCG closures.
- Emergency Dredging contracts in place by mid-Sep, completed early Oct & Nov.
- After Jeannes' interruption, over 700,000 cy of material removed, over 300,00 cy going into the nearshore.

# Summary – HSPP Prevention of Damages

- 17 Projects Lost 7,595,600 Cu. Yd. Due to Storms from Aug 11 to Sep 30, 2004
- HSSP Projects Prevented $54 Million in Average Annual Damages
- Little or no Damage to Upland Structures from Wave Damage or Beach Erosion

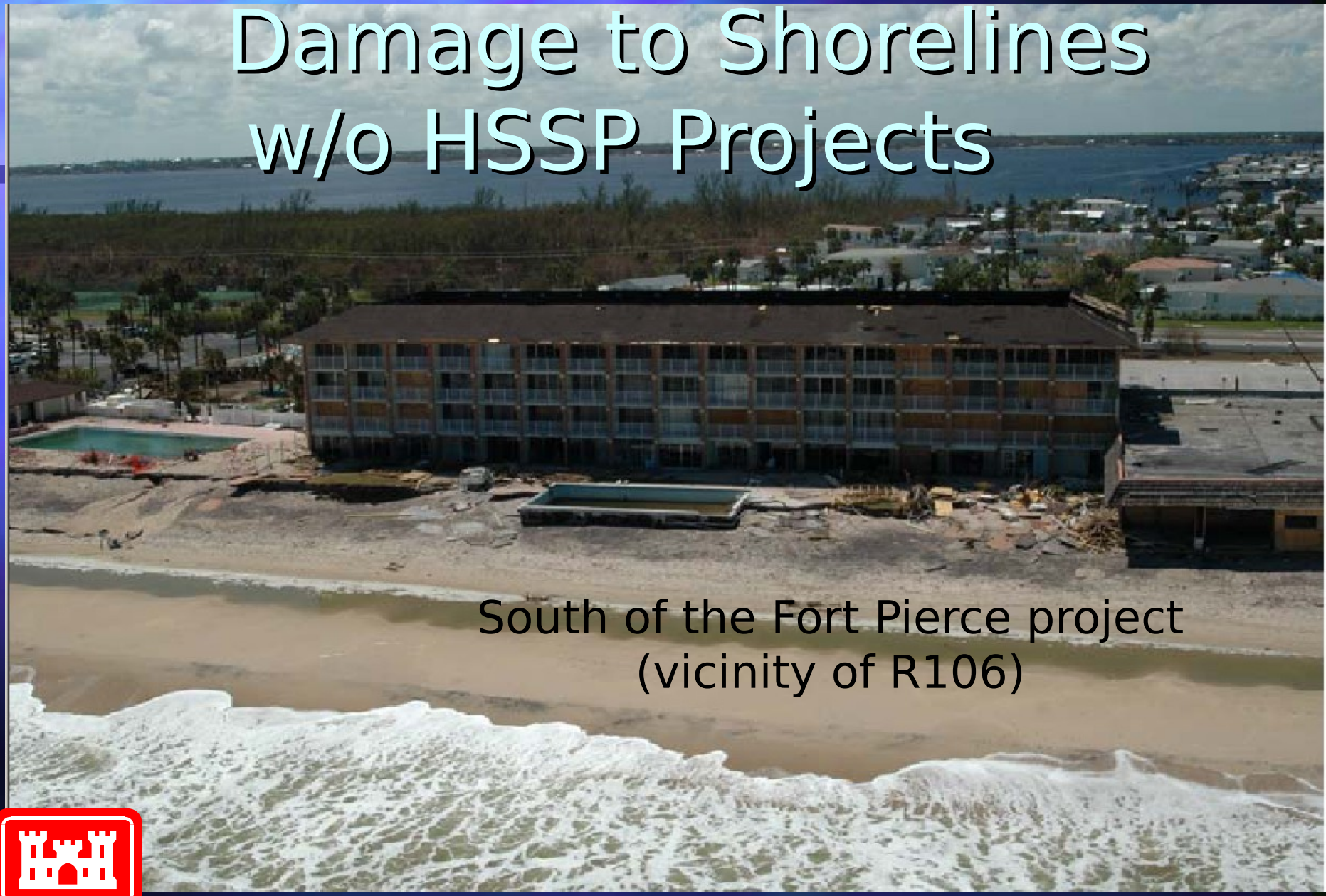
# Summary – HSPP Prevention of Damages



# Damage to Shorelines w/o HSSP Projects

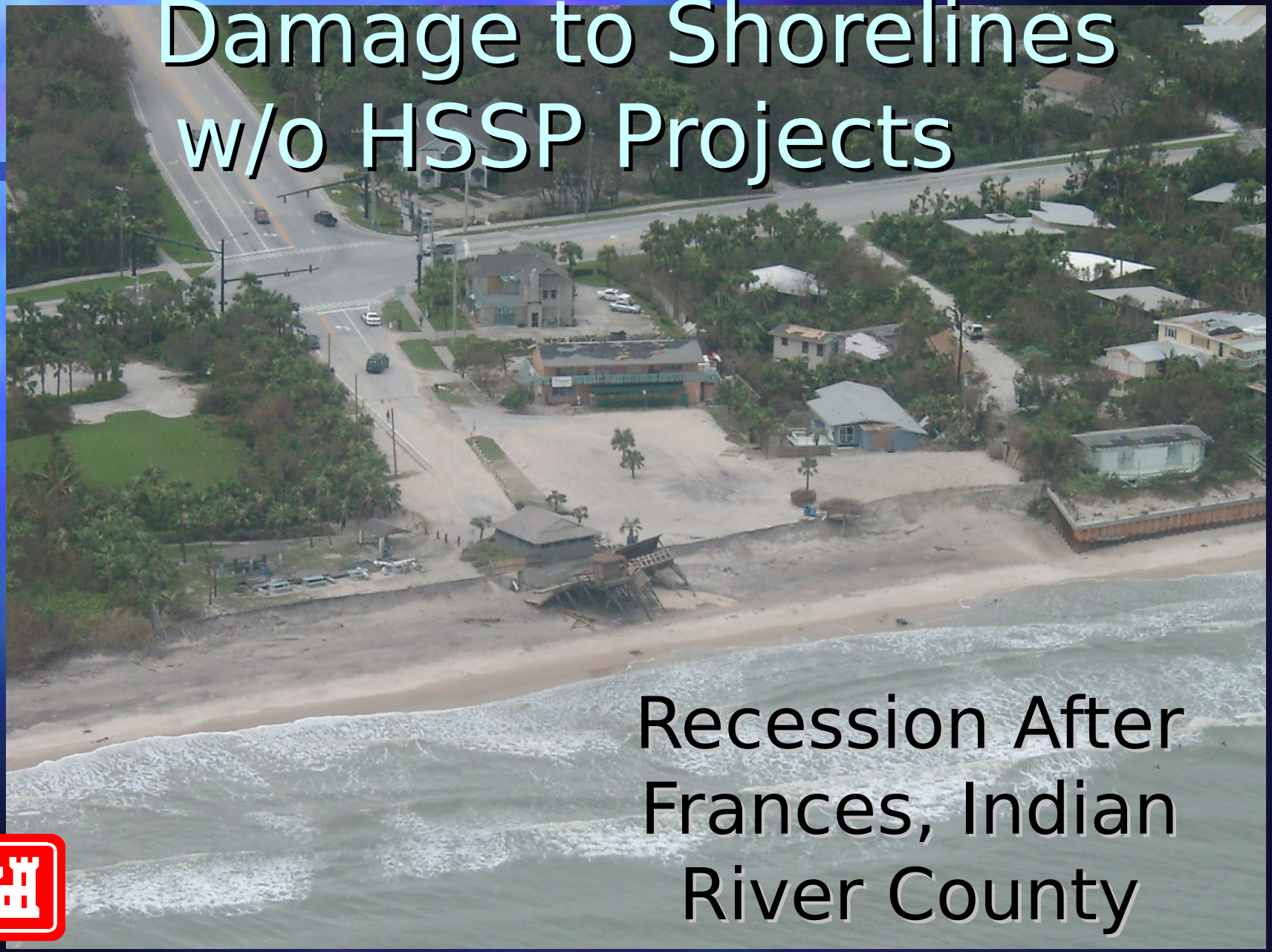
North of the Fort Pierce project
(vicinity of R2)

# Damage to Shorelines w/o HSSP Projects



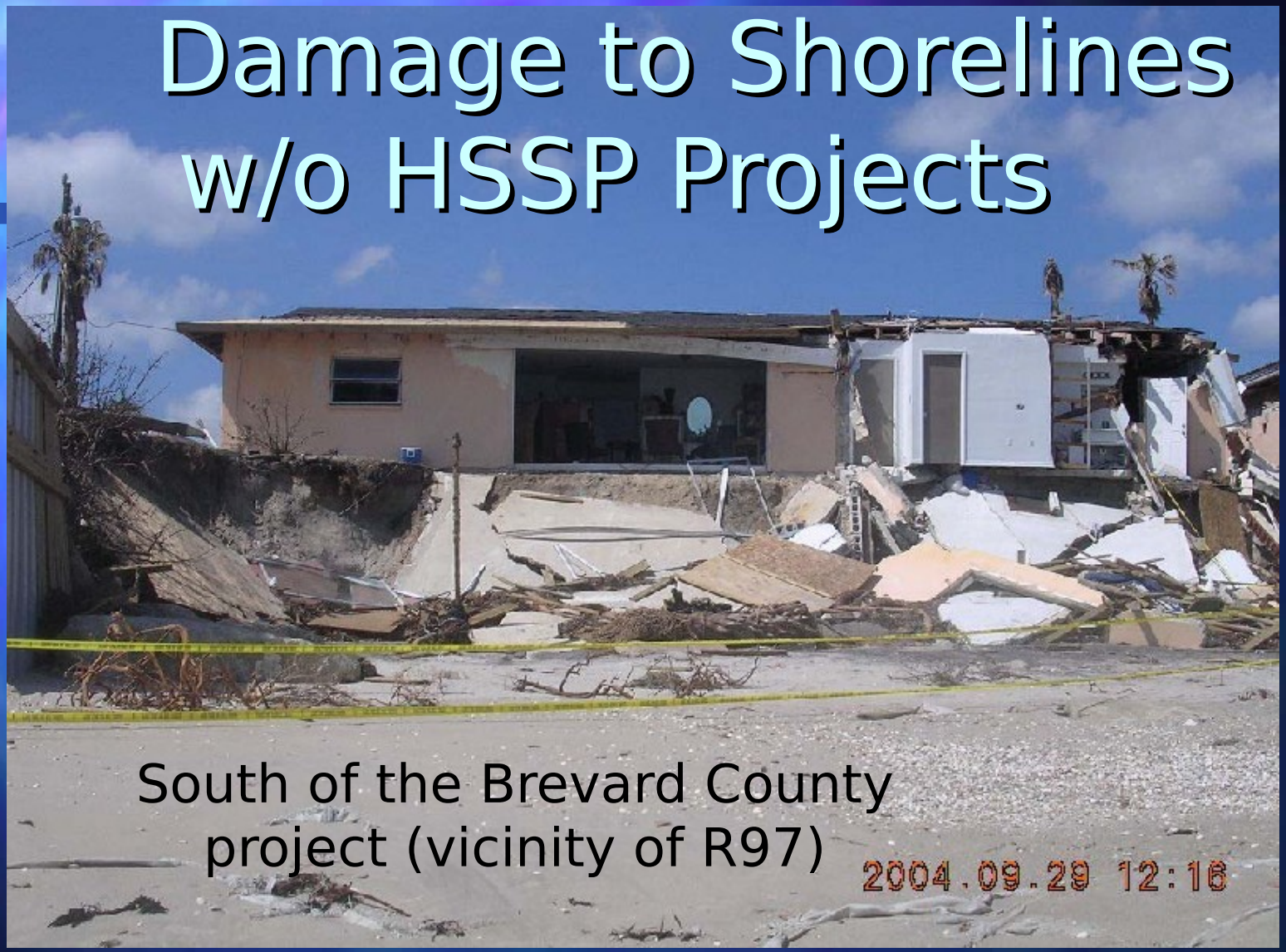
South of the Fort Pierce project
(vicinity of R106)

# Damage to Shorelines w/o HSSP Projects



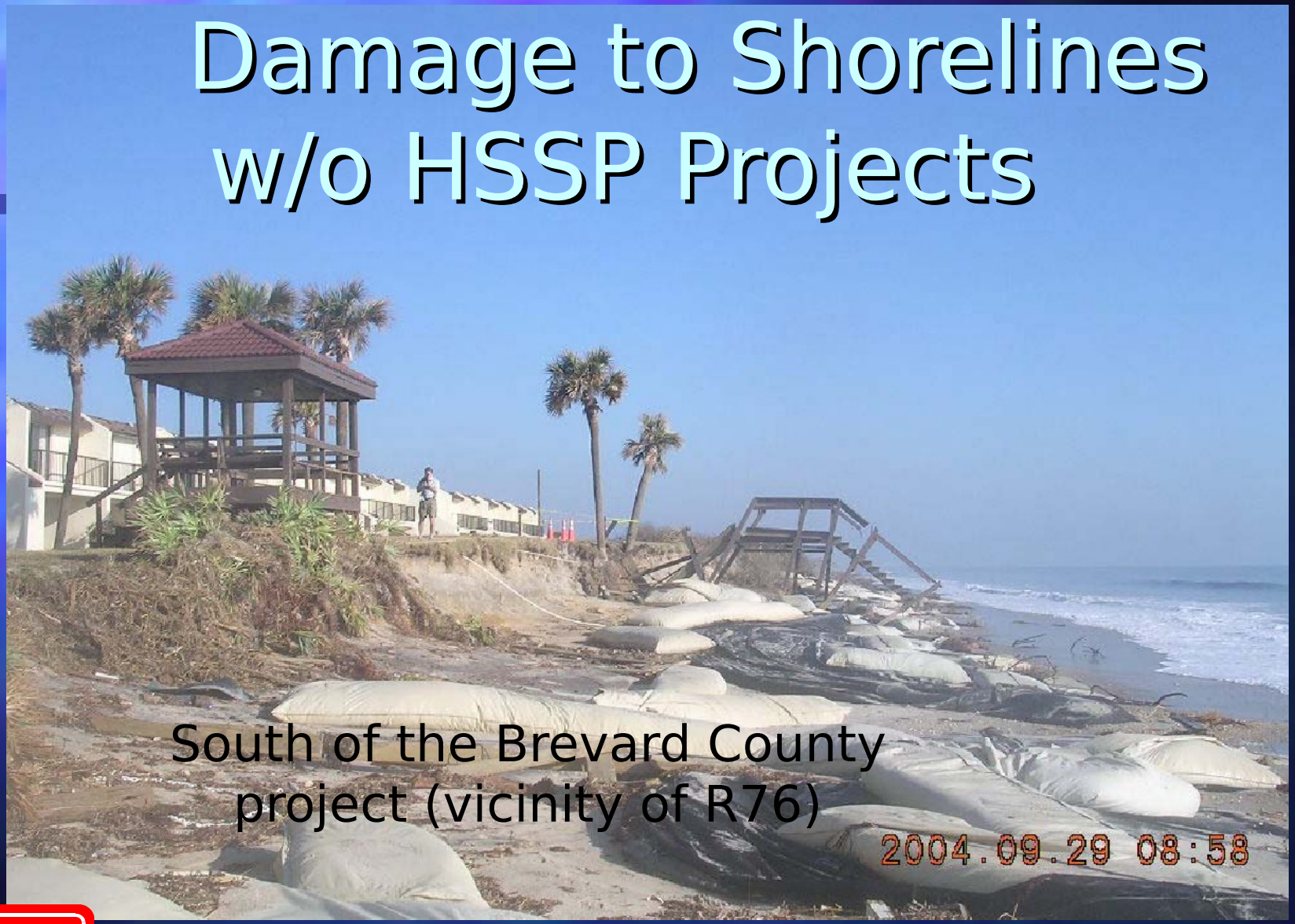
Recession After Frances, Indian River County

# Damage to Shorelines w/o HSSP Projects




South of the Brevard County project (vicinity of R97)

# Damage to Shorelines w/o HSSP Projects




South of the Brevard County project (vicinity of R76)

# Damage to Shorelines w/o HSSP Projects

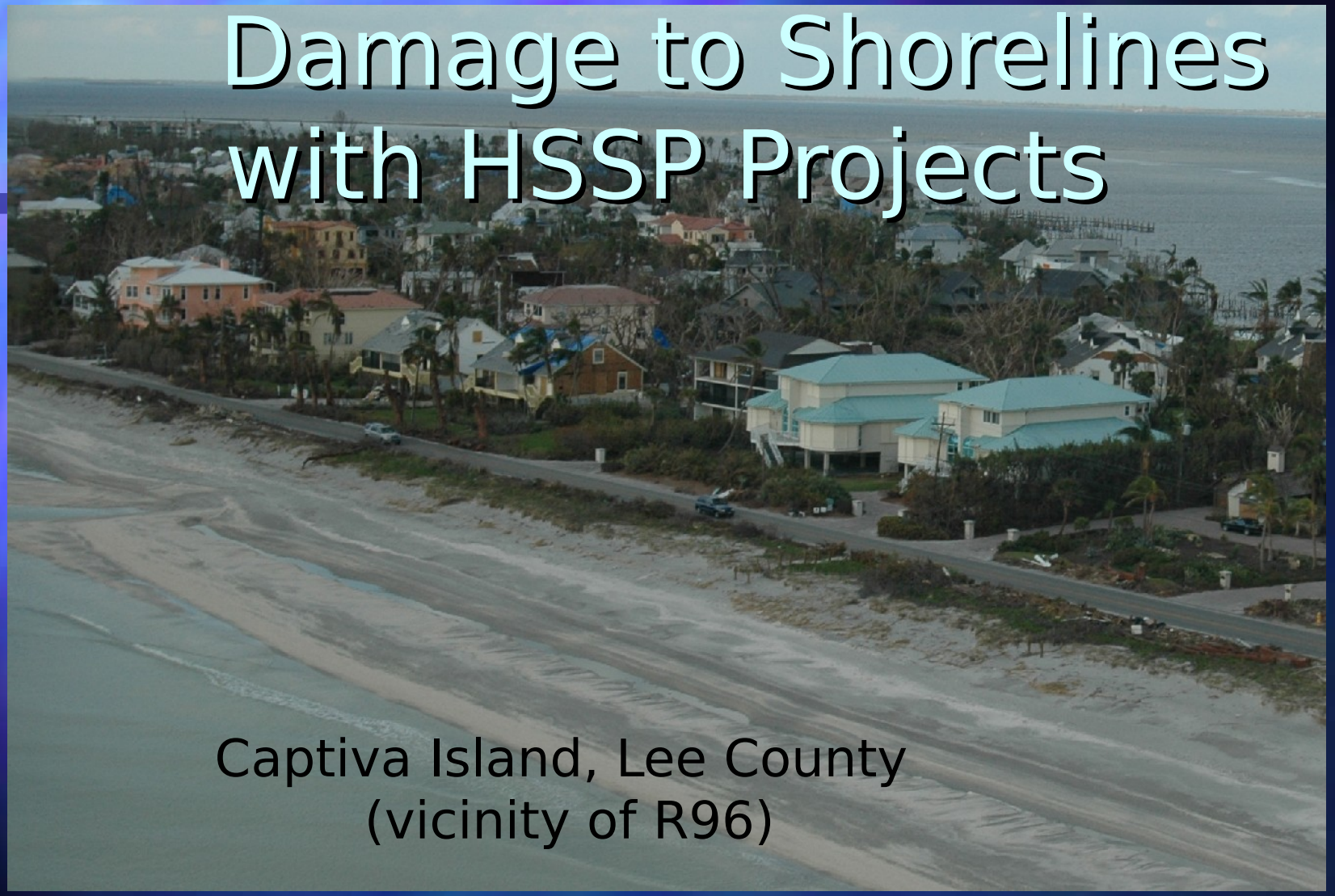
South of the Brevard County project (vicinity of R162)

# Damage to Shorelines w/o HSSP Projects

# Damage to Shorelines with HSSP Projects

Broward County project

# Damage to Shorelines with HSSP Projects



Captiva Island, Lee County
(vicinity of R96)

# Public Law 108-324, Emergency Hurricane Supplemental Appropriations Act of 2005

13 October 2004

- **Flood Control and Coastal Emergencies** (FCCE) - **$148,000,000** for Repair of HSPP damaged by storms
- **Construction General** (CG) - **$62,600,000** for Federal Share of Emergency Repair of Storm Damage to Authorized Shore Protection Projects and Assessment of Project Performance of Such Projects
- **General Investigations** (GI) - **$400,000** for Walton County Beaches, FL to Update Studies Underway to Account for Storm Impacts

# FCCE Basic Project Eligibility Criteria

- Must be a Completed Element of a Federally Authorized Project
- A Portion of a Federally Authorized Project Constructed by Non-Federal Interests When Approval of Such Construction was Obtained from Commander, USACE
- A Portion of a Federally Authorized Project Constructed by Non-Federal Interests and Designated by an Act of Congress as a Federal Project

# Joint Explanatory Statement, Conference Committee, and HQUSACE Guidance

- FCCE Funds Provided in the Act are to Restore Constructed Projects to Pre-Storm Condition
- Rehabilitation Will Only Replace Sand Lost Due to Extraordinary Storms
- Restoration Beyond the Pre-storm Condition will be Cost-Shared between the Federal Government (using Supplemental CG) and the non-Federal Sponsor

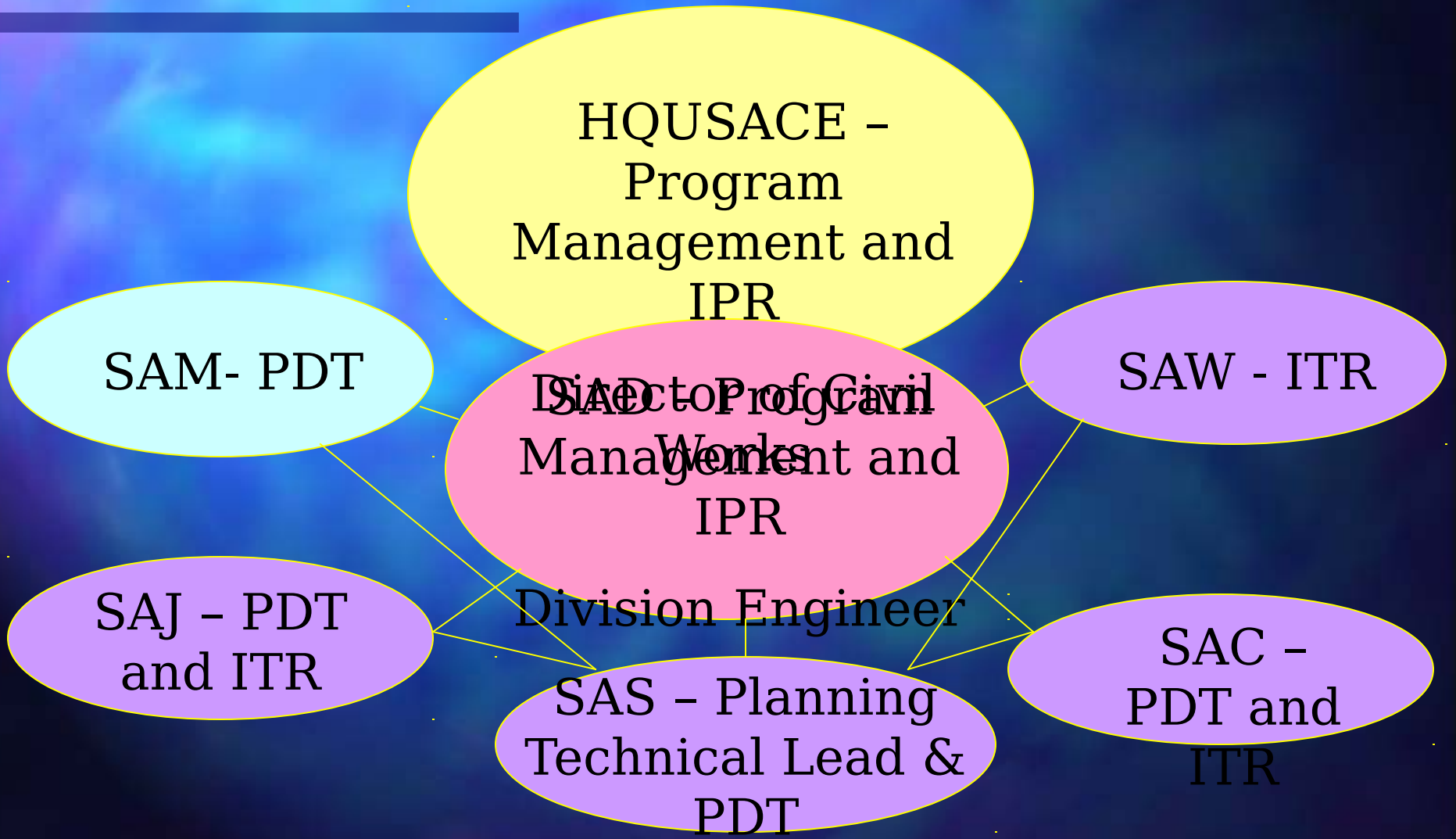
# Expedited Process

- Guidance Provided Early by HQUSACE on FCCE
- Early Resolution of Legal & Authority Issues
- Bulk Funding for Project Implementation Reports (PIRs) and Post-Storm Surveys
- Dedicated Regional/Virtual PDT and ITR
- Standardized PIR Format
- Review by Division and HQ Concurrent with PIR Development

# Fast Start

- 13 Oct - Act Passed
- 19 Oct - Regional/Vertical Project Delivery Team Includes Staff from HQ, SAD, and all Five Districts in SAD
- 25 Oct - HQUSACE Guidance Provided
- 26 Oct - First PDT Meeting in Jacksonville
- 1 Nov - Funds Received for PIRs
- 1 Nov - Regional ITR Team Established
- 5 Nov - Dedicated SAD and HQ In-Progress Review Team Established

# Corps Regional/Vertical Teams


HQUSACE – Program Management and IPR
SAM- PDT
SAD – Program Management and IPR
Director of Civil Works
SAW - ITR
Division Engineer
SAJ – PDT and ITR
SAS – Planning Technical Lead & PDT
SAC – PDT and ITR

# Fast Start
(Continued)

- District Engineer Public Notices Issued:
  - Jacksonville District 26 October 2004
  - Charleston District 10 November 2004
  - Mobile District 18 November 2004
- Surveys for Pre-Post Storm Analysis
  - Sponsors and A/Es, Corps Surveys
  - SHOALS Pre-Storm Surveys Taken Summer 2004, Post-Storm Survey of Entire FL Coast 6 Nov 04 - 6 Dec 04
- Corps - DEP Mtgs Held Nov 5th and 9th, 2004
- Contract Acquisition Plan Approved 12 Nov 04

# Sponsor Response to Public Notice

- 30 Letter/Email Requests Received for Emergency Project Rehabilitation Assistance
- 21 Projects Met HSSP Initial Eligibility Criteria
  - 14 in Jacksonville District
  - 5 in Mobile District
  - 2 in Charleston District
- 9 Projects Deemed Ineligible – Initial Federal Project Construction not Completed, or Sponsor Declined the Opportunity to Request Assistance

# Must Meet First of Two Key Criteria

**Extraordinary Storm**: Is a storm that due to its prolongation or severity creates conditions that cause significant amounts of damage. Prolongation or severity means:

- **A category 3 or higher hurricane**
- A storm that has an exceedance frequency equal to or greater than the design storm of the authorized project.

# 2nd Key Criteria

**Significant Amount of Damage**: A significant amount of damage has occurred when:

1. Estimated cost of the repair exceeds $1M and is greater that two percent of the original construction cost
2. Estimated cost of repair exceeds $6M
3. More than 1/3 of the planned or historically placed sand for renourishment effort has been lost due to the storm.

# In-Progress Review

- Significant Storm and Significant Project Impact Analysis Developed Early and Submitted for In-Progress-Review (IPR)
- Weekly Video and Telephone Conferences held by IPR team beginning 5 Nov 04 to Review Significant Storm and Project Impact Analysis, Last IPR held 14 Dec 04
- Result – Of the 22 Projects Considered, 21 are Eligible for Rehabilitation

# Environmental Coordination

- Interagency Team Established to Discuss and Resolve Issues and Conflicts
  - EPA, NMFS, USF&WS, FEMA, Corps and DEP
- 1st Meeting Held 15 Dec 2004
- Conference Calls held Every Wednesday Thereafter

# Project Implementation Reports (PIRs)

- 19 PIRs Approved by HQ
- 2 Section 14 PIRs Disapproved (SAM)

# Contract Awards – 12/14 to date

- Brevard County (combined) 26 Jan 05
- Martin County 28 Jan 05
- Fort Pierce Beach 25 Feb 05
- Delray Beach 04 Mar 05
- Broward Cty Seg III 04 Apr 05
- Venice Beach 22 Apr 05
- St. Johns County 25 May 05
- Duval County 27 May 05
- Manatee County 03 Jun 05
- Pinellas - Sand Key 23 Jul 05
- Lee County – Captiva 27 Jul 05

# Remaining Contract Awards

- Palm Beach Ocean Ridge – Sep 2005 (turtle window)
- Broward County Segment II – Nov 2007 (monitoring issues)

# What Worked?

- Bulk Funding for Project Implementation Report Preparation
- HQ Program Management Team
- PDT, ITR and IPR Teams
- Early Policy Guidance and Direction
- Standardizing PIR formats
- Surveys

# What Was Hard?

- Working Though the Thanksgiving, Christmas, New Years and MLK Holidays
- 21 PIRs being Prepared Simultaneously
- Environmental Clearances and Coordination
- Educating Sponsors on Eligibility for an Emergency Rehabilitation

# What Can Be Improved?

- **Construction General** (CG) - **$62,600,000** for Emergency Repair of Storm Damage to Authorized Shore Protection Projects and **Assessment of Project Performance of Such Projects**
- **Shore Protection Project Performance Improvement Initiative (S3P2I)**

# S3P2I

- The S3P2I has four Focus Areas:
  - Program Level Efforts
  - Assessment of Existing Project Performance
  - Project Formulation and Evaluation, and Design Improvements
  - 3-D Morphological Model Development
- Goals are to:
  - Improved Evaluation and Assessment and Net Effects of Proposed Shore Protection Projects
  - Improved Predictive Capability for Project Planning and Design and Decision Support

# S3P2I Program Management Team

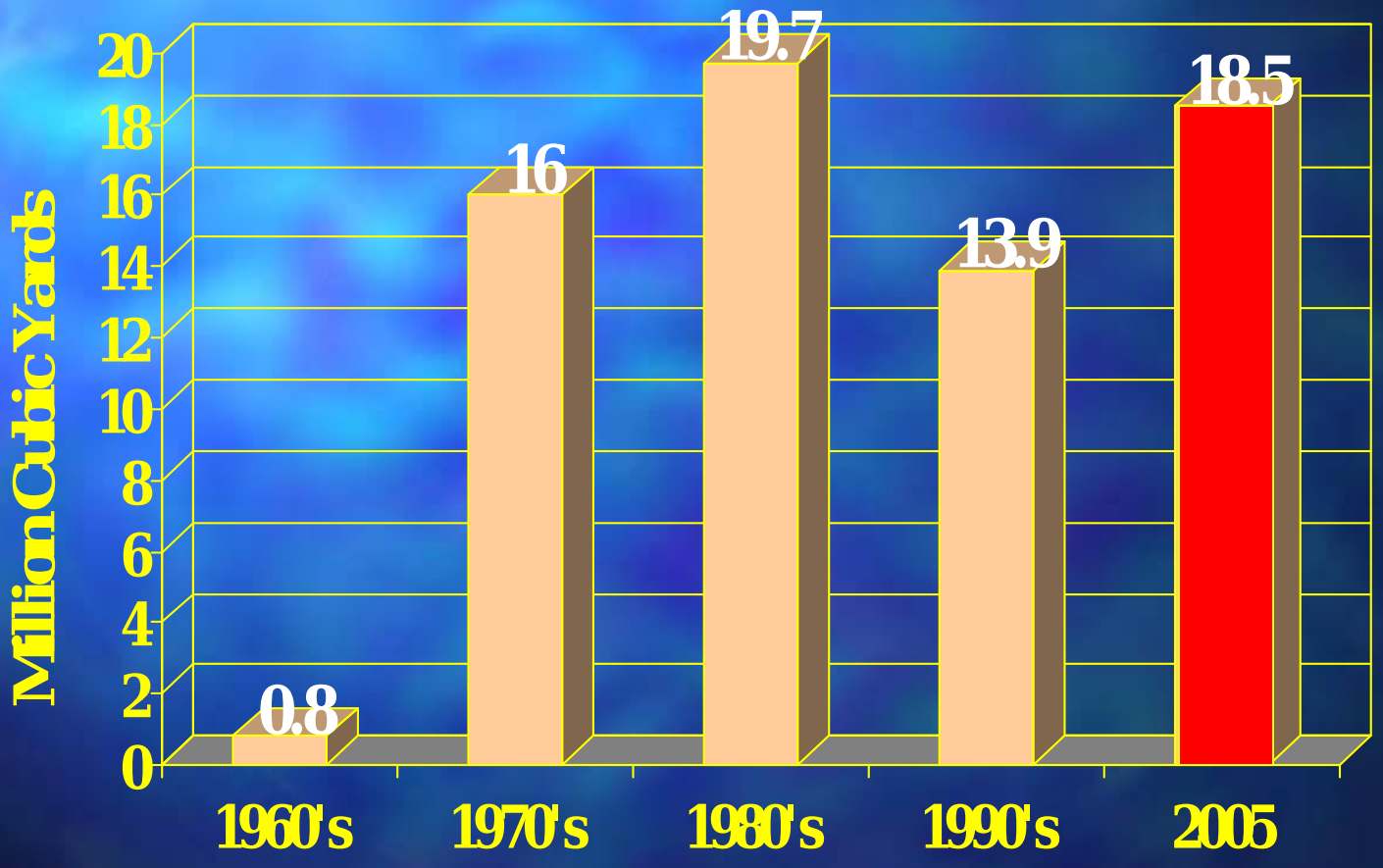
- William Curtis, ERDC
- Sharon Haggett, Wilmington District
- Stephen Couch, North Atlantic Division
- Dr. Donald Resio, ERDC
- Lillian Almodovar, HQUSACE
- Thomas Richardson, ERDC
- Charles Chesnutt, Institute for Water Resources
- Kaiser Edmond, South Atlantic Division
- Joseph Vietri, North Atlantic Division
- Dr. Bruce Taylor, CERB

# FCCE/HSPP PROGRAM SUMMARY

- FCCE Volume 8 MCY
- 100% Federal Cost $78.8 Million
- Additional Nourishment Volume 11 MCY
- Full Restoration Cost $107.9 Million
  - Federal Restoration Share $ 62.4 Million
  - Non-Federal Restoration Share $ 45.5 Million
- **Total Volume 19 MCY**
- **Total Cost $186.7 Million**

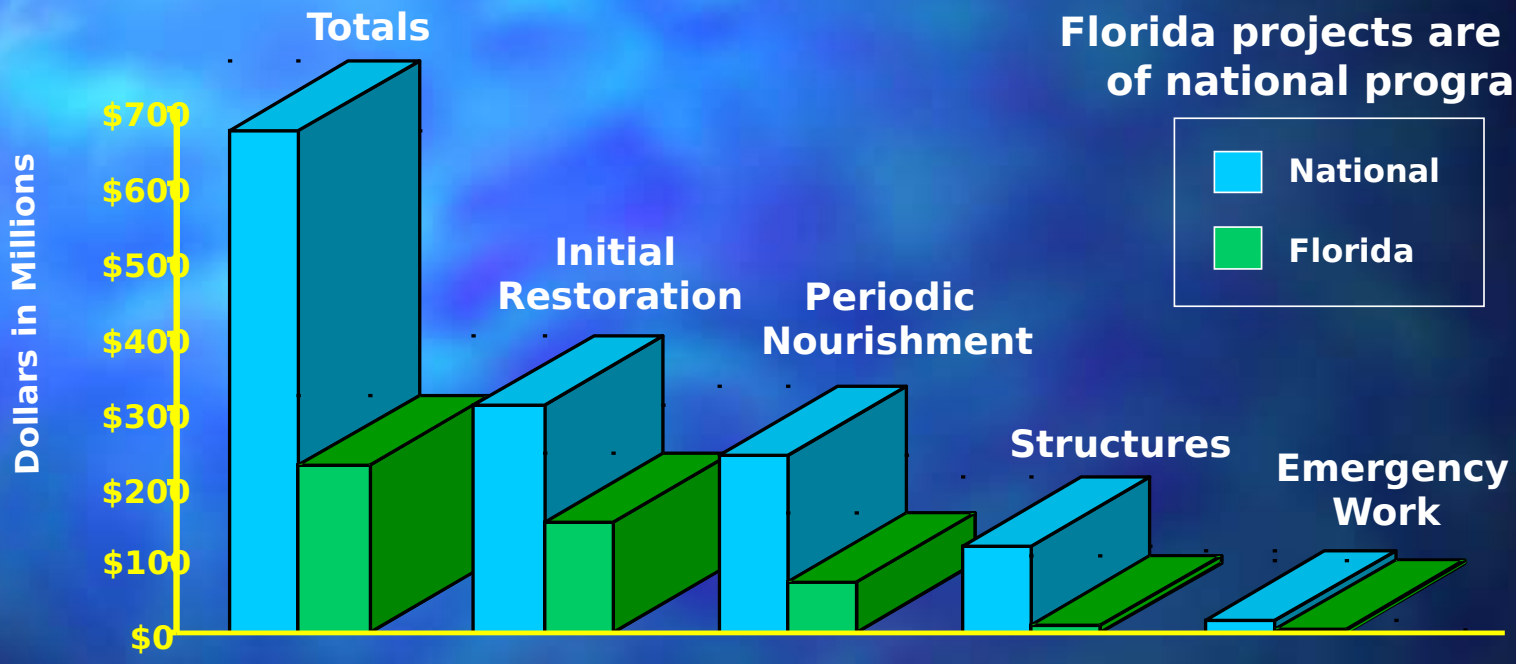
# Shore Protection Program

## Sand Deposition 1960 – 1997 vs. 2005




**1960 to 1997**
**Total : 50.5 MCY**

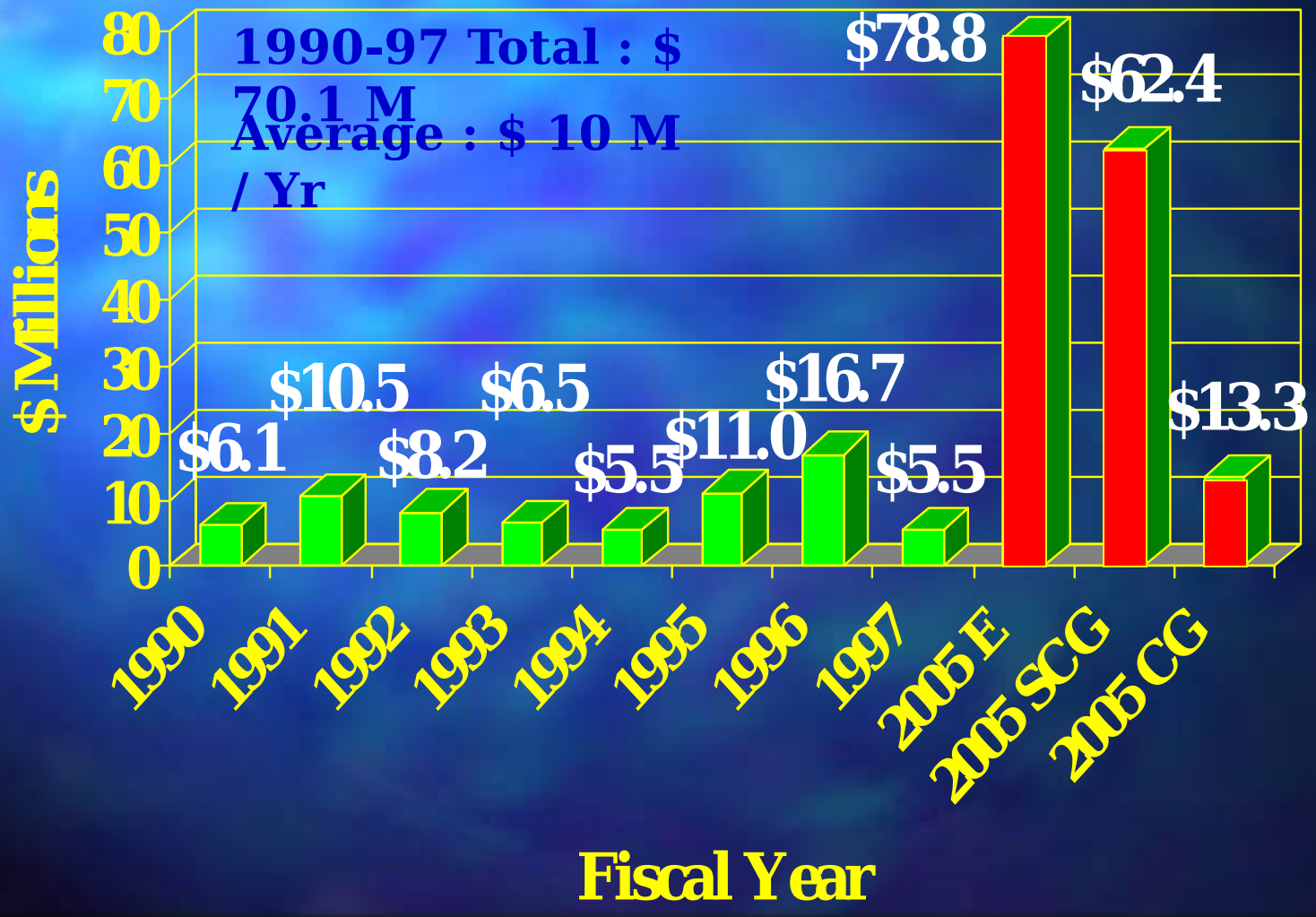
# Federal Shore Protection Expenditures
# National vs. Florida (1993)




| | NATIONAL | FL | FL % |
|---|---|---|---|
| EMERGENCY WORK | $ 15.9 | $ 3.2 | 20.1% |
| TOTAL | $670.2 | $223.0 | |

# Program

## Federal Funding 1990 to 1997 vs. 2005



# Summary

- Scope of Program Unprecedented
- Corps Project Management Business Process at its Best, Regional and Vertical Teams, Sponsors, Contractors and Environmental Resource Agencies Working Together, Rapidly Solving Problems

- ftp://ftp.saj.usace.army.mil/pub/uploads/k3pdpckb/Hurricane04/

# *Thank You ...*